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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,859	03/05/2002	Kiyoshi Miyazaki	Q68747	8348

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WASHINGTON, DC 20037

EXAMINER

LIU, MING HUN

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 05/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/087,859

Applicant(s)

MIYAZAKI, KIYOSHI

Examiner

Ming-Hun Liu

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,2 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The statement "said capacitor and said amplifier being provided for each level of the first group of levels to generate a level in cooperation with each other for the first group of levels" is convoluted and fails to specify the invention. In particular, the term "in cooperation" is unclear, as one skilled in the art would not understand exactly how these components are cooperating.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7-9, 12 and 13 are rejected under 35 U.S.C. 102(b) as being unpatentable by US Patent 5,859,632 to Ito.

In reference to claim 1, Ito discloses a power supply circuit for a liquid crystal display. The supply circuit supplies a plurality of potentials that are divided into two levels. By referring to figure 1, it can be seen that an amplifier in voltage follower form (OP1 and OP2) are

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connected to one or more capacitors (C1-C4). A switching means, controlled in a predetermined pattern (figure 2), uses discharge voltages from the capacitors to produce a second group of levels of voltage potentials.

In reference to claims 7 and 8, it can be seen that additional capacitors are used to (C1-C4) to stabilize the levels.

In reference to claim 9, Ito teaches on column 9, lines 1-7 that the switching timing allows for proper functioning of the display.

In reference to claim 12, Ito explains on column 4, lines 18-23 that the timing of the capacitors are coordinated in a such a way where the capacitors are used to generate a level of output and then switched to a period of charging.

In reference to claim 13, Ito also uses low-withstanding components for the low voltage potential side of the circuit (column 4, lines 41-43).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of US Patent 6,087,580 to Takahashi et al.

In reference to claims 2 and 3, Ito teaches an invention that is similar to the one being claimed. By referring to Ito's figures, it can be seen that the less amplifiers than the number of

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intermediate voltage levels. However, Ito does not teach the use of fewer capacitors to generate the intermediate voltage levels. Takahashi on the other hand does teach the use of a single capacitor in the generation of two voltage levels (figure 1 and column 2, line 65 - column 3, line 15). Takahashi's invention could have been added to Ito's invention to create the desired intermediate voltage levels. One skilled in the art would have been motivated to add Takahashi's invention because of its power saving and component saving benefits.

In reference to claim 4, claim 4 is rejected largely on the grounds offered in the rejection of claim 1. By referring to figure 5 of Ito, it can be seen that Ito's invention includes two voltage following amplifiers. The Ito's invention does also include two capacitors and two switching means and four intermediate voltage levels.

Even if the applicant does amend the claim to narrow the scope that eliminates the incorporation of other capacitors and switches, the combination of Ito and Takahashi's invention. As explained above, the combination of the two references reduces the number of switches and capacitors.

In reference to claim 5, Ito's figure 7 show that the two group of level are selected at the junction of the two capacitors (c11 and c01).

Claim 6 is rejected largely on the grounds offered in the rejection of claim 1. It can be seen from the figure that Ito's invention includes 1 amplifier, three capacitors ad three or four switching elements.

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito.

Ito's does not specifically state that the display signal comprises either a frame signal, data signal or a signal based on a data output signal, however these limitations are obvious if not inherent to the display art. These signals are the fundamental methods that allow images to be displayed. This fact is made apparent from the background disclosure of Ito's patent (figure 19 and column 1, lines 35-55).

In reference to claim 11, the limitations offered in claim 11 are inherent if not obvious to the display art. As made apparent by figures 18 and 19, it is shown that the LCD must include common and segment electrodes and that the selecting and data driving processes must be in sync with the electrode selections.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on 703-305-9720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ming-Hun Liu

  
DENNIS-DOON CHOW  
PRIMARY EXAMINER